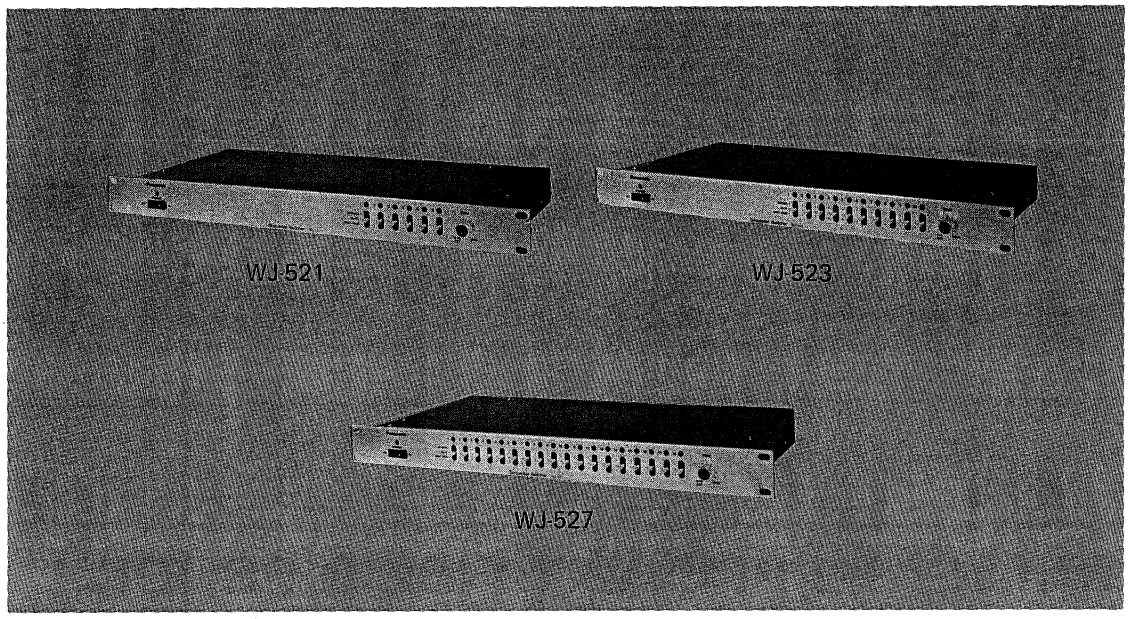
# Operating Instructions

**Sequential Switcher**

## WJ-521
## WJ-523
## WJ-527




National Panasonic

Before attempting to connect or operate this product, please read these instructions completely.

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**PLEASE READ FOLLOWING INSTRUCTION IF YOUR POWER SOURCE VOLTAGE IS MORE THAN 200V.**

## WARNING

**THIS APPARATUS MUST BE EARTHED.**

**IMPORTANT**

The wires in this mains lead are coloured in accordance with the following code.

| | |
|---|---|
| Green-and-yellow: | Earth |
| Blue: | Neutral |
| Brown: | Live |

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown mut be connected to the terminal which is marked with the letter L or coloured red.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

# PREFACE

Panasonic sequential switchers are excellent accessories for multi-camera security systems, and accept the camera inputs as;

WJ-521 : up to 6 camera inputs
WJ-523 : up to 10 camera inputs
WJ-527 : up to 18 camera inputs

These sequential switchers have two video outputs: sequential and spot monitor. The sequential output displays each camera in sequence; front panel indicators show which camera is being displayed. The spot monitor output permits manual selection of any camera for display on a second monitor; when not used, this output automatically becomes sequential. Any camera switched to the "spot monitor" position is still included in the switching sequence. A bypass switch allows any camera to be bypassed from the switching sequence.

The length of time each camera is displayed during the sequence is manually adjustable from 1 to 30 seconds. External timing is also possible. When using a Panasonic time lapse video tape recorder the VTR can control the switching interval so that complete pictures will always be recorded for each camera. A trigger pulse output on the rear panel of each sequential switcher permits one switcher to control the timing of others, so that in a multi-camera, multi-monitor system, the pictures on all the monitors will change at the same time — for less eye strain and fatigue.

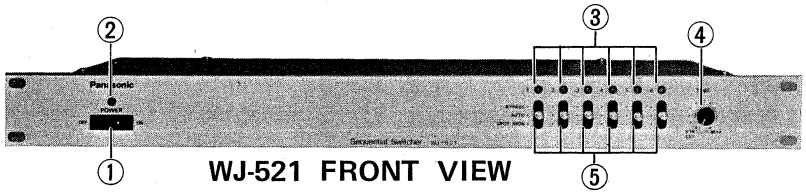
Moreover this model has a multi-connector on the rear panel which can be used for displaying the number of camera input or for controlling the spot monitor mode by remote-controller (local made). The Panasonic sequential switchers are compact, solid state devices that require only 1-3/4" of EIA rack space. They are part of Panasonic's complete line of video security products, that also includes closed circuit TV cameras, TV monitors, and video tape recorders.

# FEATURES

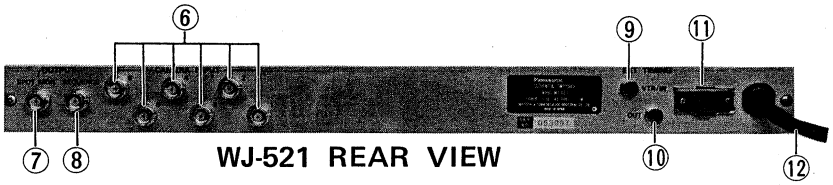
1) For sequential switching of up to 6(WJ-521) or 10 (WJ-523) or 18 (WJ-527) closed circuit TV cameras.
2) Two video outputs: sequential and spot monitor.
3) Sequential output displays each camera in sequence.
4) Front panel indicators show which camera is being displayed.
5) Spot monitor output for manual selection of any camera for display on a second monitor.
6) Spot monitor output: when not used, automatically becomes sequential.
7) Any camera switched to the spot monitor position is still included in the switching sequence.
8) Bypass switch skips any camera from sequence.
9) Switching interval manually adjustable from 1 to 30 seconds.
10) Switching interval can be externally controlled, by time lapse VTR or by another sequential switcher.
11) Multi-connector on the rear panel can be used for displaying the number of camera input or for controlling the spot monitor mode by remote controller (local made).
12) EIA rack mounting (1-3/4" H).
13) Vertical Interval switching for no flip over picture.

# NAMES AND FUNCTIONS OF OPERATING CONTROLS AND CONNECTORS

WJ-521

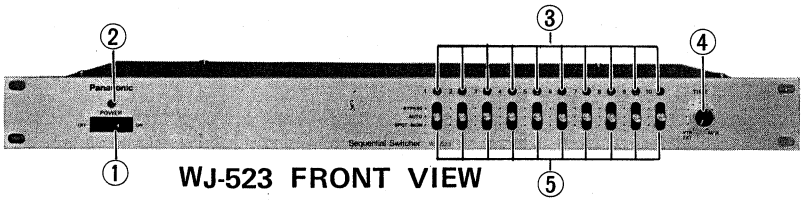



WJ-521 FRONT VIEW

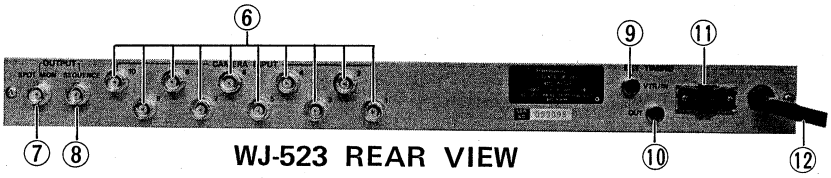


WJ-521 REAR VIEW

WJ-523

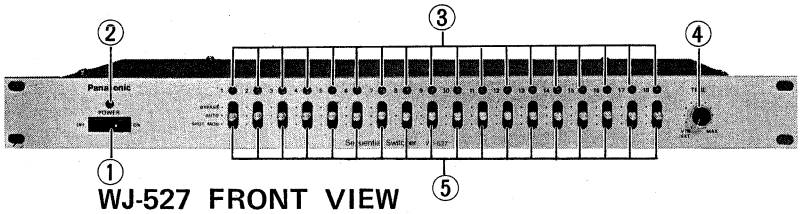



WJ-523 FRONT VIEW

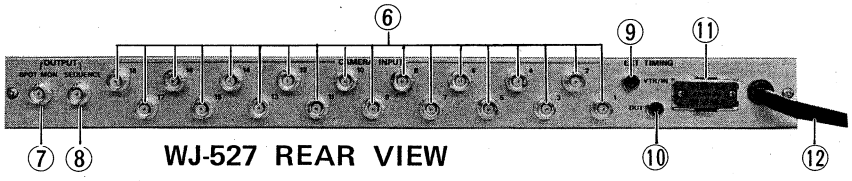


WJ-523 REAR VIEW

WJ-527




WJ-527 FRONT VIEW



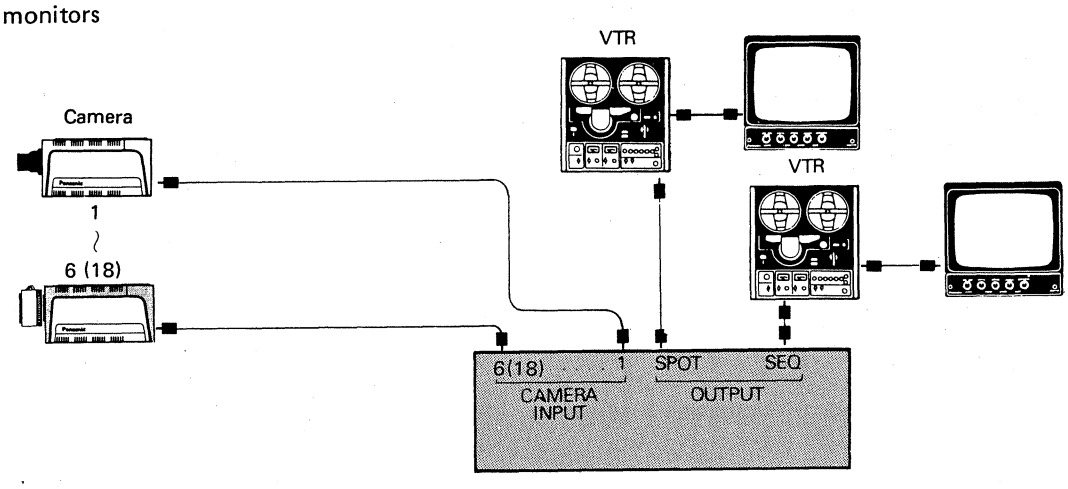
WJ-527 REAR VIEW

# APPLICATION DIAGRAM

It is recommended to use AC line locked cameras or external sync on all cameras to assure less vertical picture disturbance when switching. It is also recommended that a supervisory TV monitor be used where possible.

## APPLICATION 1 Manned supervision with 6(18) cameras

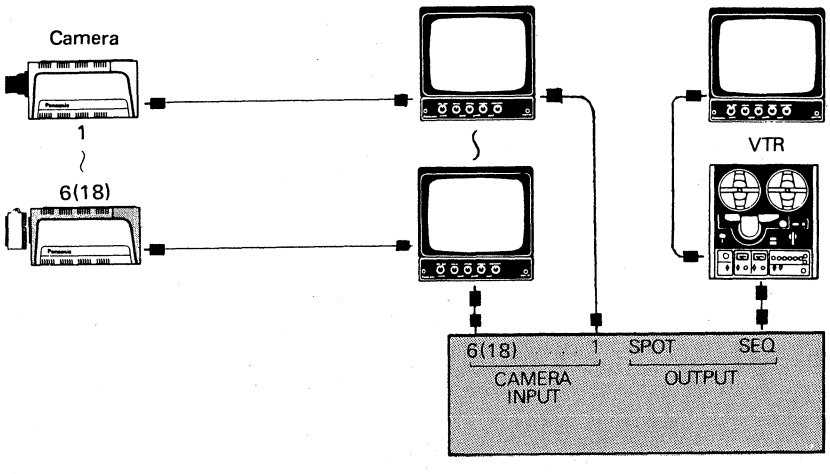
a) Two TV monitors




The supervisor normally watches the sequence output pictures on the screens of the monitors. If he depresses any one of the 3 position selector switches on the front panel to SPOT MONITOR; that camera picture will be continually displaced on the monitor connected to SPOT MON. output. Normally, a recording VTR is connected to the sequence output; but to record Sequence or a selected SPOT MON. output connect VTR to SPOT MON.

b) More than Two TV monitors

In line monitor for each camera




Supervisor has visual pictures from all cameras displaced on individual monitors. His back-up is a continuous recording VTR connected to sequence output.

Note

In the case of manned supervision, it would be more efficient and convenient to use more than two TV monitors. If only one or two monitor are available, use the system (a) as appropriate to the purpose.

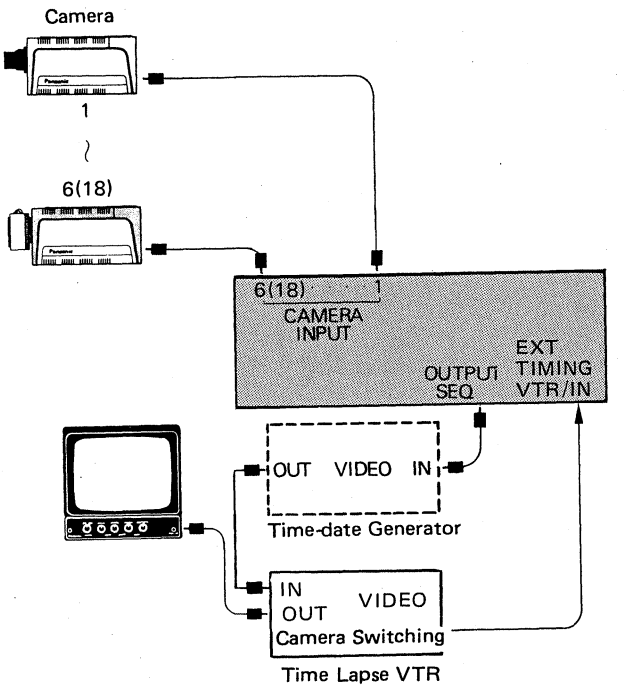
In all the cases of (a), and (b), either an ordinary VTR or a Time Lapse VTR may be used.

## APPLICATION 2 Unmanned supervision by using of 6 (18) cameras.

In the case of unmanned supervision, use a Panasonic Time Lapse VTR. Connect the VTR/IN input connector on the EXT timing of the sequential switchers to the trigger output connector on the Time Lapse VTR with the RCA pin plug cable which is not provided as a standard accessory to the WJ-521/WJ-523/WJ-527, and set the Time and EXT/VTR knob on the front panel to the EXT/VTR position.

Switch on the VTR for recording so that sequence operation will be started automatically by trigger signals from the Time Lapse VTR for long-time recording.

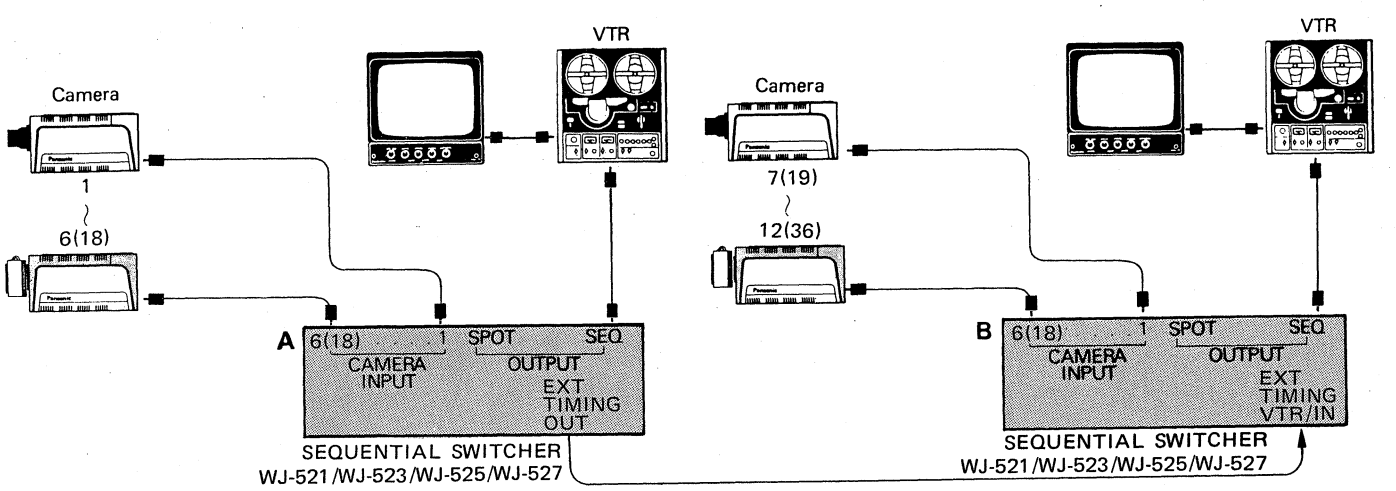
In case of unmanned supervision of a specific position only, connect the OUTPUT SPOT MON output connector to the VTR, and set the 3-position switch to the SPOT MON mode, or skip unnecessary parts by selecting the BYPASS mode as appropriate to your purpose.




Note

The Panasonic Time Lapse VTR is capable of long-time recording.

## APPLICATION 3 Manned simultaneous supervision of two systems with two sequential switchers



In case of simultaneously supervising two systems by using two sequential switchers, the same switching timing for the two sequential switcher will greatly facilitate supervision. When the EXT Timing Out connector on the switcher A is connected to the EXT Timing VTR/IN input connector on the switcher B with the RCA-RCA pin plug cable (not provided) , the switcher B will switch the cameras at the same timing as selected for the switcher A.

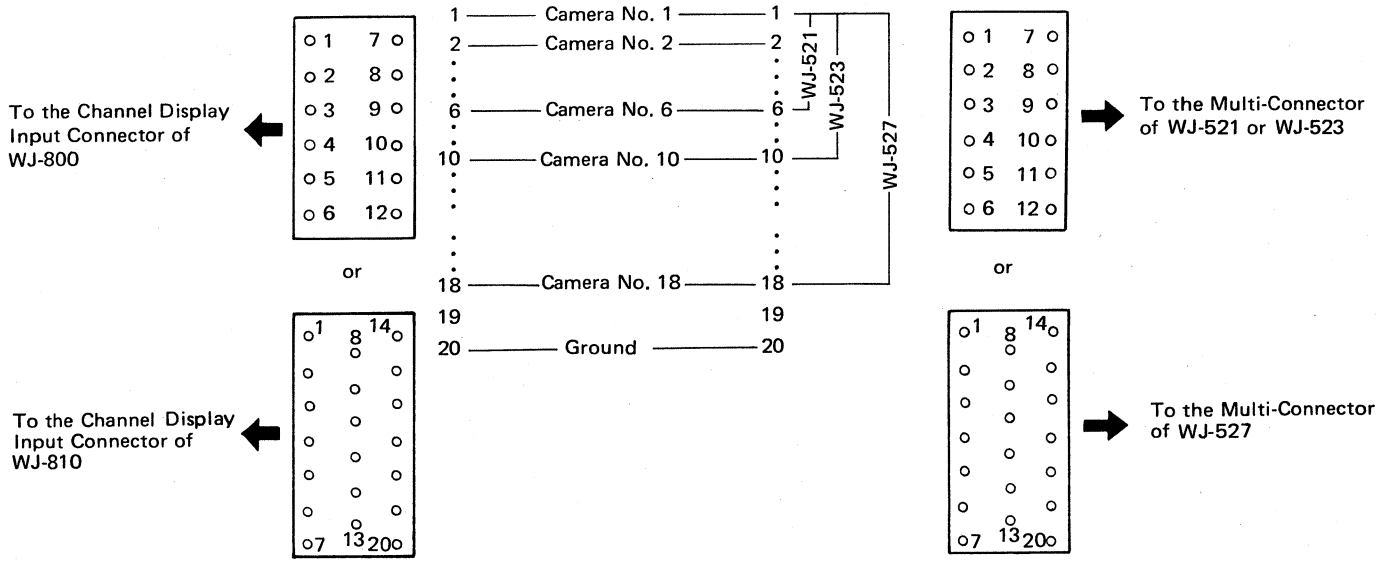
When recording, refer to Application 1 and select the SPOT MON mode or connect the sequence output connector to the VTR as appropriate to your purpose.

When using this system for unmanned supervision, refer to Application 2 and use the Panasonic Time Lapse VTR.

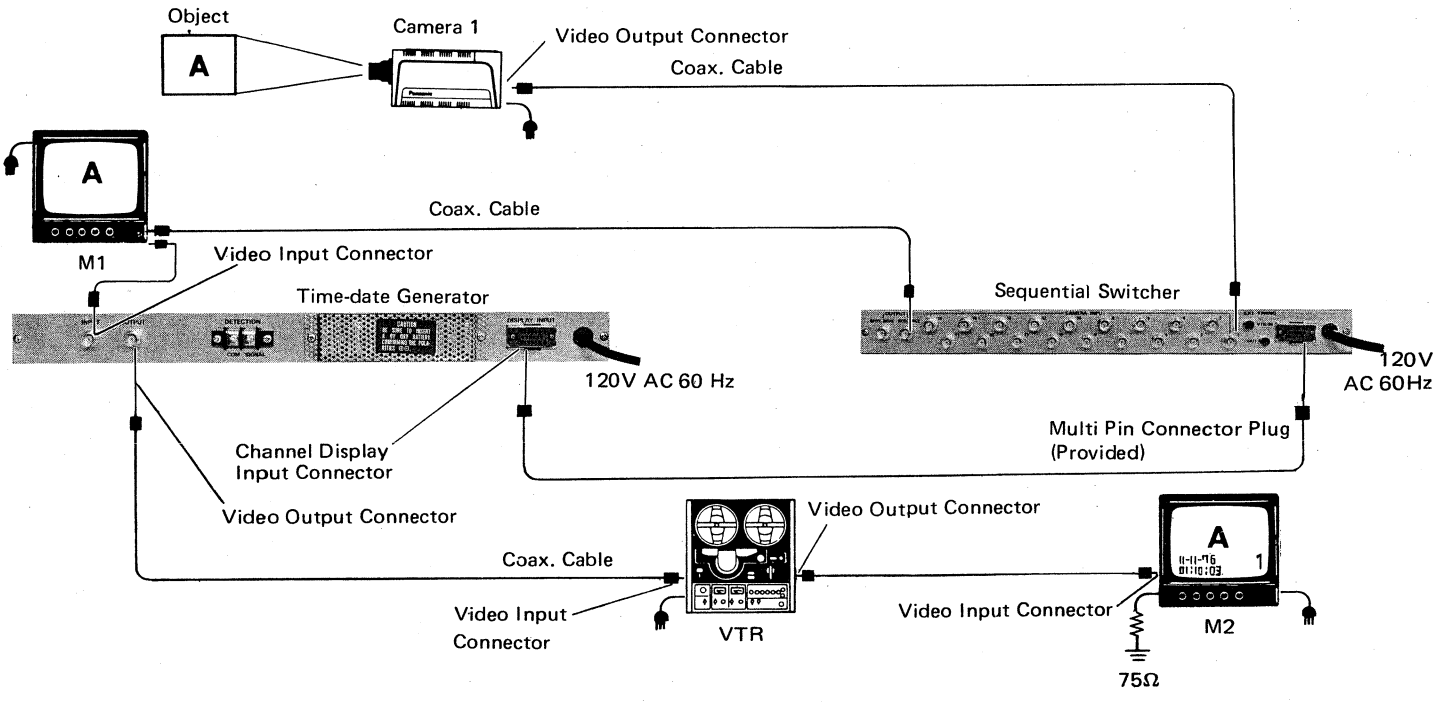
## APPLICATION 4

Multi-connector on the rear panel can be used for displaying the number of camera input.

A. Wiring




B. Connections




- Video monitor M1 displays the same picture as the video output from the sequence monitor of sequential switcher.
- Video monitor M2 displays the picture of object A, time/date generated by Time/date Generator, and number of camera input which has been selected by sequential switcher.

# SPECIFICATIONS

| | |
|---|---|
| Video Input | 1 Vp-p Composite x 6/75 ohms (WJ-521): BNC Connector<br>1 Vp-p Composite x 10/75 ohms (WJ-523): BNC Connector<br>1 Vp-p Composite x 18/75 ohms (WJ-527): BNC Connector |
| Video Output | |
| Sequence Out | 1 Vp-p Composite x 1/75 ohms: BNC Connector |
| Spot Monitor Out | 1 Vp-p Composite x 1/75 ohms: BNC Connector |
| Frequency Response | 12 MHz ±3.0 dB |
| Gain | Unity |
| Switching Interval | Approx. 1 to 30 Sec. |
| Timing Input | Timing pulse from Panasonic Time Lapse VTR or Sequential Switchers EXT. TIMING OUT. |
| Timing Output | Open Collector (Max. 25 V 50 mA)<br>Normally connected to Sequential Switchers EXT. TIMING VTR/IN. |
| Switching | Vertical Interval |
| Multiconnector | Multi-connector on the rear panel can be used for displaying the number of camera input or for controlling the spot monitor mode by remote controller (local made). |
| Power Source | 220V AC, 50Hz 5W: WJ-521/C,G; WJ-523/C,G; WJ-527/C,G<br>240V AC, 50Hz 5W: WJ-521/B; WJ-523/B; WJ-527/B |
| Ambient Temperature | 14°F to 122°F |
| Dimension | Approx. 18-7/8"(W) x 1-3/4"(H) x 9-7/16"(D)<br>[480 mm(W) x 44 mm(H) x 240 mm(D)] |
| Weight | WJ-521: 6.6 lbs (3 kg)<br>WJ-523: 6.6 lbs (3 kg)<br>WJ-527: 7.0 lbs (3.2 kg) |

Weights and dimensions shown are approximate.
Specifications are subject to change without notice.

# ACCESSORIES

## STANDARD ACCESSORIES

| | | |
|---|---|---|
| YWP1612BA-C | 1 pc | Multi-connector plug (12 pin) for WJ-521/WJ-523 |
| YWP1620BA-C | 1 pc | Multi-connector plug (20 pin) for WJ-527 |

## FRONT

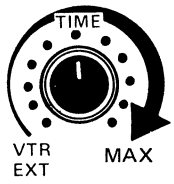
① Power ON-OFF switch

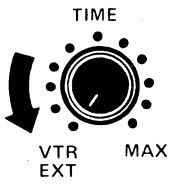
② Power Indicator Lamp

③ Sequence Output Indicator Lamp
A lit lamp indicates that the signals of the corresponding camera are available at SEQUENCE OUT ⑧.

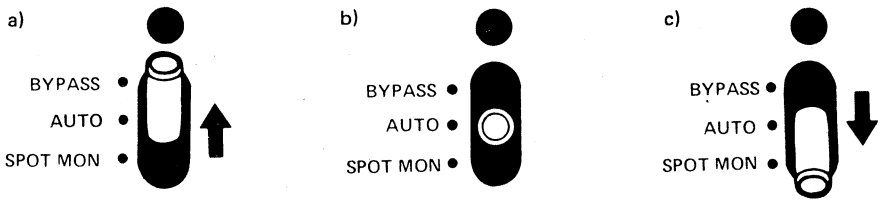
④ Time (variable control) and EXT/VTR
The sequential switcher's switching timing can be continuously changed from 1 to 30 seconds by turning this knob. When the knob is turned fully counterclockwise, the switch is turned on and the sequence stops.

This position is used when switching by use of an external timing pulse. If trigger signals from a Time Lapse VTR are connected to the EXT TIMING VTR/IN input connector ⑨ when using it in combination with the WJ-521/WJ-523/WJ-527, the sequential switcher will be controlled by the trigger siganls from that Time Lapse VTR.
In case two sequential switchers are used, set this knob to the EXT/VTR position. (Refer to the Application Diagram for further details.)




⑤ 3-Position Selector Switch




a) BYPASS mode
When the switch is set to this mode, the signals of the camera in that position will be skipped regardless of the presence of video signals while the other cameras signals will be fed out in sequence. In other words, the signals of that camera will not be fed out of SEQUENCE OUT. This function may be very conveniently selected with this switch in case places of monitoring vary from time to time.

b) AUTO mode
When the switch is set to this mode, the signals of the camera will be automatically in sequence regardless of the presence of video signals.
Video signals are always available at the output connector so that a VTR, etc. will also record no-signal outputs.

c) SPOT MON mode
When this mode is selected, the signals of the camera in that position will come out of the OUTPUT SPOT MON connector ⑦ so that these camera signals can be selectively monitored. During this time, sequence operation goes on and sequence outputs are fed out from the OUTPUT SEQUENCE connector ⑧. The sequence mode set in this position will do the same operation as the AUTO mode (b). If two or more cameras are set in this mode, the signals of the lower-numbered camera in this position will be used as output signals.

## REAR

⑥ CAMERA INPUT

Connect video output signals from cameras. When connected, the signals will be terminated at 75 ohms.

⑦ OUTPUT; SPOT MON

This is a manual video switcher output connector, which normally produces the same sequence operation output signals as the SEQUENCE output connector ⑧. If more than one of the 3-position selector switches are set to the SPOT MON mode, sequence outputs will stop, and the signals of that camera which is set to the SPOT MON mode will be produced from the output connector.

⑧ OUTPUT; SEQUENCE

This is a sequential switcher output connector which always produces sequence outputs.

⑨ EXT TIMING VTR/IN

This is an input connector for sequence operation with external timing pulses. Connect trigger signals from a Time Lapse VTR to this connector. If a cable is connected to this connector, set the TIME and EXT/VTR knob ④ to the EXT/VTR position.

The cable to be connected to the connector ⑨ or ⑩ is provided as standard accessory.

⑩ EXT TIMING OUT

This output connector produces timing pulse signals for switching the sequence operation. As shown in the system application examples, connect the EXT TIMING VTR/IN input connector of one of two sequential switchers, in case two of them are used independently, so that the two switchers will be switched over from one to the other and vice versa at the same timing for easy monitoring.

⑪ MULTI CONNECTOR

It can be used for displaying the number of camera input or for controlling the spot monitor mode by remote controller (local made).

Refer to application 4 for details.

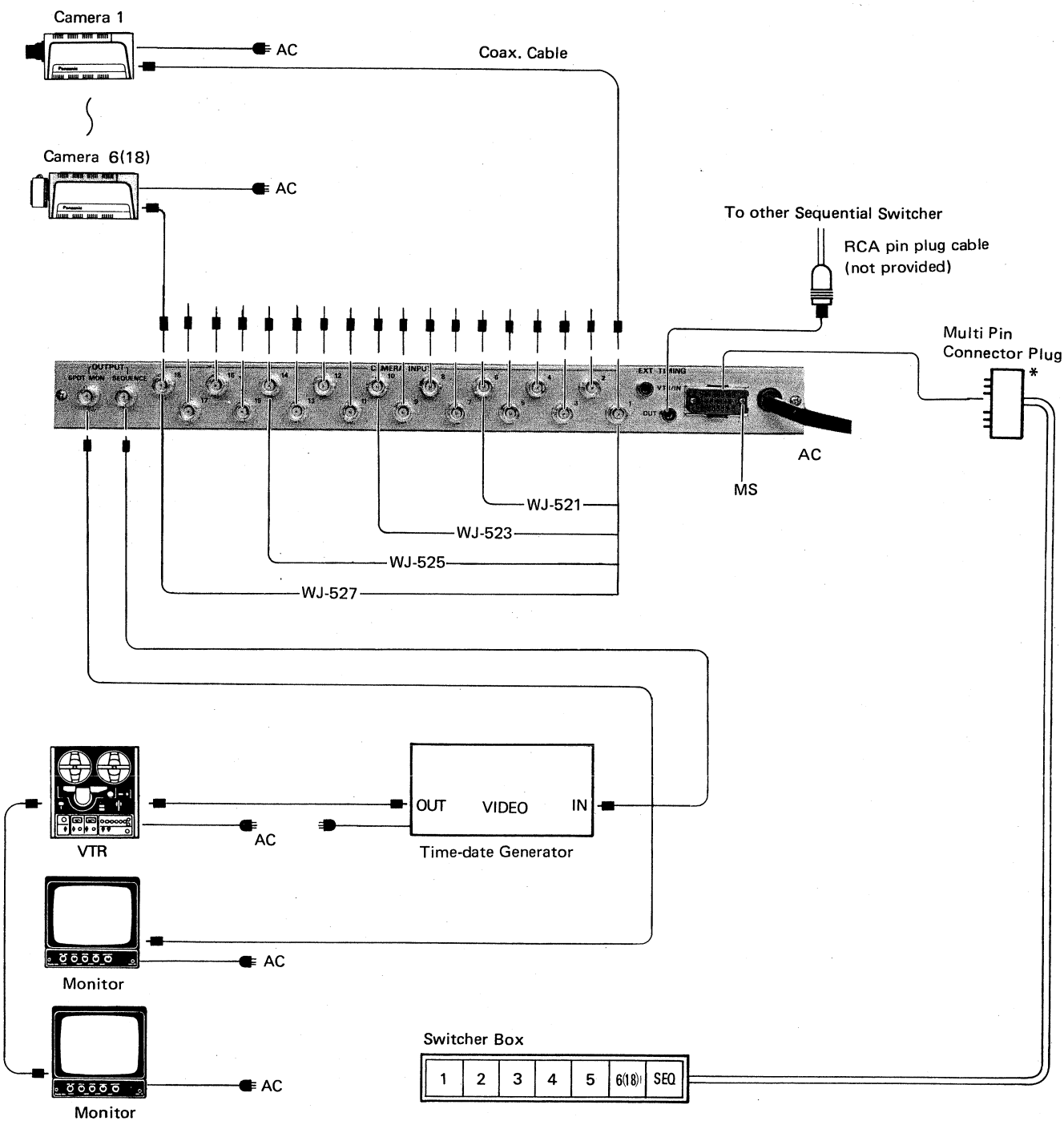
⑫ Power cable

# CAUTIONS

1) The timing output ⑩ is provided for connection to another sequential switchers timing input.
2) Use this unit in a place where relative humidity is less than 90% and ambient temperature within the range of 14°F to 122°F.
3) Make sure that the power switch is OFF when connecting cables.
4) To be proper vertical interval switching for no flip-over picture, the following items should be paid the attentions as;
   a) All cameras should be synchronized.
   b) It is recommended that all cameras are 2:1 interlace.
   c) If the sync of all cameras are vertical interlock, the polarity of line source should be the same.
   d) The picture is flip-over when the sequence come to no camera connection. In this case, the 3-position selector switch ⑤ should be BYPASS position.
   e) It is recommended to use the cameras of the same manufacturer.

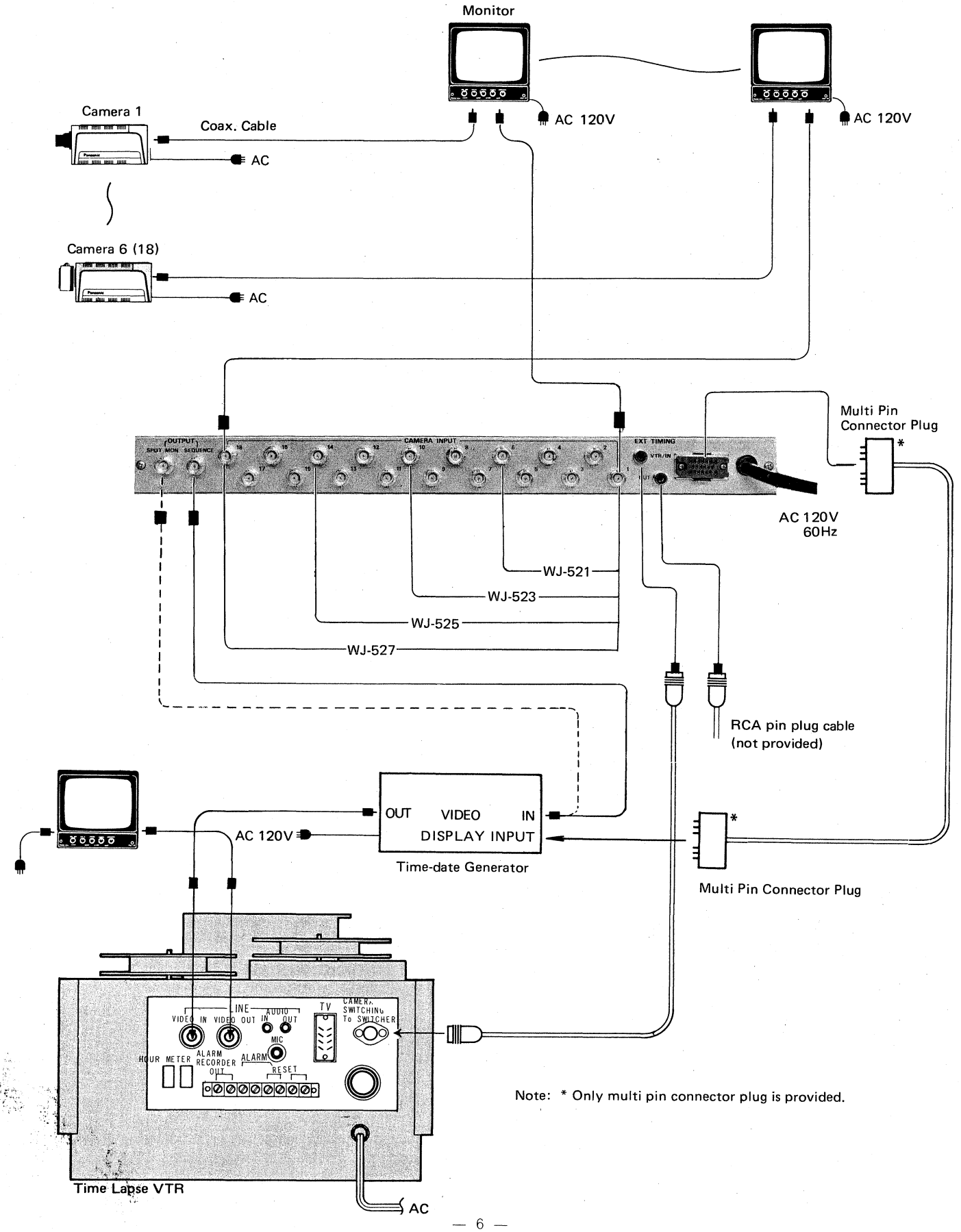
# CONNECTIONS

## 5-1 SYSTEM (I)




Note: * Only multi pin connector plug is provided.

## 5-2 SYSTEM (II) In line monitor for each camera




Note: * Only multi pin connector plug is provided.